

ANTIBODY COMPLEXES AND METHODS FOR IMMUNOLABELING

**ABSTRACT**

5 The present invention provides labeling reagents and methods for labeling primary antibodies and for detecting a target in a sample using an immuno-labeled complex that comprises a target-binding antibody and one or more labeling reagents. The labeling reagents comprise monovalent antibody fragments or non-antibody monomeric proteins whereby the labeling reagents have affinity for a specific region of the target-binding

10 antibody and are covalently attached to a label. Typically, the labeling reagent is an anti-Fc Fab or Fab' fragment that was generated by immunizing a goat or rabbit with the Fc fragment of an antibody. The present invention provides for discrete subsets of labeling reagent and immuno-labeled complexes that facilitate the simultaneous detection of multiple targets in a sample wherein the immuno-labeled complexes are distinguished by i) a ratio of

15 label to labeling reagent, or ii) a physical property of said label, or iii) a ratio of labeling reagent to said target-binding antibody, or iv) by said target-binding antibody. This is particularly useful for fluorophore labels that can be attached to labeling reagents and subsequently immuno-labeled complexes in ratios for the detection of multiple targets.